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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,636

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Francesco Drius

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EXAMINER

NGUYEN, HUNG D

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,636	Applicant(s) DRIUS ET AL.	
	Examiner HUNG NGUYEN	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/23/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the amendment filed on 4/12/2006. As directed by the amendment: claims 1-9 have been amended, claims 10 and 11 have been cancelled. Thus, claims 1-9 are presently pending in this application.

Claim Objections

Claim 5 is objected as being in improper dependent form because claim 5 is depended on the latter claim 6. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Claim 5 should be dependent from claim 4 (as noted in the original filed claims) as claim 5 is a method claim and shall not depend on the system claim 6. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 3742

4. In claim 1, there is insufficient antecedent basis for “the flash-welding type” in line 2, “the welding machine” in line 5, “the triggering angle” and “the thermal power” in line 6, “the welding process” in line 7, “the arc length” recited in line 13 in the claim.

5. In claim 3, there is insufficient antecedent basis for “the primary voltage” recited in line 4 in the claim.

6. In claim 6, there is insufficient antecedent basis for “the machine” in line 3, “the control system” and “the method according to claim 1” in line 5, “the performance variable” in line 10, “the optimal pre-determined path” recited in line 14 in the claim.

7. In claim 7, there is insufficient antecedent basis for “the transformation ratio” recited in line 2-3 in the claim.

8. In claim 8, there is insufficient antecedent basis for “the desired paths” recited in line 3-4 in the claim.

9. In claim 9, there is insufficient antecedent basis for “the observer (A) of dynamic state” in line 1-2, “the generator of sync signals (E)” recited in line 3 in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Pra et al. (US Pub 2004/0094516) in view of Ivkovich (US Pat. 6,583,386).

Art Unit: 3742

12. Regarding claims 1 and 6, De Pra et al. discloses a system for controlling a butt welding machine comprises: the machine comprises a valve for controlling positioning of clamps of the machine (Par. 44); and controlling the triggering angle of a partializer for controlling the thermal power supplied to the welding process [energy supplied by the primary and the secondary to the jaw 5 and 6 (Fig. 3, Par. 103)]; the control system is adapted to perform comprises: a dynamic state observer adapted for observing a plurality of state variables of a welding process carried out by the machine (Par. 67-68 and 70); a dynamic path generator for performance variables, adapted for defining pre-determined optimal paths for the performance variables to follow, the latter comprising at least an arc length (Par. 61, 112 and 114); a dynamic control law adapted for controlling the valve and the partializer on the basis of the value of the performance variables and of the optimal pre-determined paths (Par. 33-34 and 44-47) except for the generator of sync signals adapted for generating sync signals. Ivkovich teaches the method and system for weld monitoring and tracking where the coordinated part-tracking (same as sync) (Col. 7, Line 12-16) is the process to synchronize the information obtained from the welding operation (Col. 8, Lines 26-47; Col. 9, Lines 5-21). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in De Pra et al. the teaching of Ivkovich in order to have the generator of sync signals adapted for generating sync signals, for the purpose of synchronizing the welding information from all the stages.

13. Regarding claim 2, De Pra et al. discloses observing state variables of the welding cycles by the dynamic state observer (Par. 67-68 and 70); defining pre-

Art Unit: 3742

determined optimal paths to be followed by a plurality of performance variables by means of a dynamic path generator for performance variables (Par. 67-68 and 70); executing a dynamic control law based upon the value of the performance variables, of the optimal paths and of an operating strategy determined according to the step that the welding process is undergoing (Par. 124); except for the sync signals by means of a signal generator, on the basis of which the dynamic control law adopts the given operating strategies. Ivkovich teaches the method and system for weld monitoring and tracking where the coordinated part-tracking (same as sync) (Col. 7, Line 12-16) is the process to synchronize the information obtained from the welding operation (Col. 8, Lines 26-47; Col. 9, Lines 5-21). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in De Pra et al. the teaching of Ivkovich in order to have the generator of sync signals adapted for generating sync signals, for the purpose of synchronizing the welding information from all the stages.

14. Regarding claim 3, De Pra et al. further discloses the dynamic control law, during a scintillation step of the welding process, maintains the arc length constant and varies the primary voltage on the basis of the variation of arc impedance (Par. 61, 112 and 114).

15. Regarding claim 7, De Pra et al. further discloses the transformation ratio variator (tap changer), adapted for controlling the transformation ratio (Par. 90 and 115).

16. Regarding claims 4 and 8, De Pra et al. further discloses the dynamic diagnostics system is provided, adapted for generating indices of weld quality, comparing the paths of the performance variables with the desired paths (Par. 26 and 52).

Art Unit: 3742

17. Regarding claim 9, De Pra et al. discloses all the claimed features as set forth above except for the observer of dynamic state, the dynamic path generator, the dynamic control law, the generator of sync signals, and the dynamic diagnostics system are implemented by means of a computer program. Ivkovich teaches the method and system for weld monitoring and tracking where the computer program is used for monitoring, tracking and coordinating information relate to the quality of the welding process (Col. 5, Lines 35-39; Col. 9, Lines 2-5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in De Pra et al. the teaching of Ivkovich in order to have the observer of dynamic state, the dynamic path generator, the dynamic control law, the generator of sync signals, and the dynamic diagnostics system are implemented by means of a computer program, for the purpose of updating, monitoring information data related to the welding process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 8:30AM-6PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG NGUYEN/
Examiner, Art Unit 3742

/TU B HOANG/
Supervisory Patent Examiner, Art Unit 3742